AIRBORNE LASER LABORATORY

The Airborne Laser Laboratory combines the versatility of a highly sophisticated ground based laboratory with the capability of the P-3 aircraft to provide an ideal facility to conduct airborne research and development testing.

Airborne Laser Laboratory

The Airborne Laser Laboratory at the Naval Air Warfare Center, Aircraft Division, Patuxent River, Maryland is a uniquely configured P-3 aircraft ideally suited to conduct research and development (R&D) of laser/optics systems and components. It is configured with four large optical windows to transmit and receive laser signals, a 26.5 inch aperture telescope with a coaxial scanner, a data acquisition/control subsystem and open space within the fuselage to attach universal racks for electronic equipment. The platform also has a separate power distribution system for test equipment and is instrumented with a Global positioning System (GPS) and interface to the aircraft Inertial Navigation System (INS). Currently, a Light Detection and Ranging (Lidar) system is installed on the Airborne Laser Laboratory for conducting ocean penetrating experiments.

The Airborne Laser Laboratory is a unique facility designed to combine the requirements of real world measurements with a Research and Development (R&D) environment. The platform is an extensively modified P-3 aircraft containing a Light Detection and Ranging (Lidar) system. The interior of the aircraft has open space to mount universal racks with electronic equipment and four large optical windows on the underside for transmitting and receiving optical signals. Customers can utilize the existing hardware or integrate new components with the Lidar for user specific applications. The design concept for this laboratory was to provide a flexible architecture in which new equipment can be rapidly configured and tested from an airborne platform.

The Lidar utilizes a tunable excimer pumped dye laser transmitter (480 to 532 mm) operating at 500 pulses per development.

In addition to the Lidar, the Airborne Laser Laboratory is equipped with a Global Positioning System (GPS) system and navigation interface for precision flight path execution. The platform instrumentation suite also includes acoustic receiving and recording equipment.

For more information contact the Airborne Laser Laboratory at the Naval Air Warfare Center Aircraft Division, Patuxent River, MD at 301-342-2043.